



## The causality analysis of climate change and large-scale human crisis

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### Abstract:

Recent studies have shown strong temporal correlations between past climate changes and societal crises. However, the specific causal mechanisms underlying this relation have not been addressed. We explored quantitative responses of 14 fine-grained agro-ecological, socioeconomic, and demographic variables to climate fluctuations from A.D. 1500-1800 in Europe. Results show that cooling from A.D. 1560-1660 caused successive agro-ecological, socioeconomic, and demographic catastrophes, leading to the General Crisis of the Seventeenth Century. We identified a set of causal linkages between climate change and human crisis. Using temperature data and climate-driven economic variables, we simulated the alternation of defined "golden" and "dark" ages in Europe and the Northern Hemisphere during the past millennium. Our findings indicate that climate change was the ultimate cause, and climate-driven economic downturn was the direct cause, of large-scale human crises in preindustrial Europe and the Northern Hemisphere.

**Source:** <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3198350>

### Resource Description

#### Exposure :

weather or climate related pathway by which climate change affects health

Food/Water Security, Human Conflict/Displacement, Human Conflict/Displacement, Temperature

**Food/Water Security:** Agricultural Productivity

**Temperature:** Extreme Cold, Extreme Heat

#### Geographic Feature:

resource focuses on specific type of geography

None or Unspecified

#### Geographic Location:

resource focuses on specific location

Non-United States

**Non-United States:** Europe



# Climate Change and Human Health Literature Portal

## **Health Impact:**

specification of health effect or disease related to climate change exposure

Developmental Effect, General Health Impact, Infectious Disease

**Developmental Effect:** Other Functional Deficit

**Infectious Disease:** Vectorborne Disease

**Vectorborne Disease:** Tick-borne Disease

**Tick-borne Disease:** Plague

## **Mitigation/Adaptation:**

mitigation or adaptation strategy is a focus of resource

Adaptation

## **Resource Type:**

format or standard characteristic of resource

Research Article

## **Timescale:**

time period studied

Time Scale Unspecified

## **Vulnerability/Impact Assessment:**

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content